World Aquaculture 2017

Sustainable Aquaculture
New Frontiers for Economic Growth
Spotlight on Africa

June 26-30, 2017

Cape Town International Convention Centre
Cape Town, South Africa

The Annual International Conference & Exposition of World Aquaculture Society

Hosted by

Aquaculture Association of Southern Africa

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WELCOME

Welcome to World Aquaculture 2017 - the first international conference and exposition of the World Aquaculture Society (WAS) to be held on the African continent. This year's annual meeting is co-organized with the Aquaculture Association of Southern Africa (AASA) and the South African Department of Agriculture, Forestry and Fisheries (DAFF). World Aquaculture 2017 has attracted wide sponsorship and support from African development institutions including the South African Department of Agriculture, Forestry and Fisheries, the African Union and NEPAD, and the WorldFish Centre. On behalf of the World Aquaculture Society, its chapters and our co-hosts, it is our pleasure to welcome you to Cape Town, South Africa. We hope you enjoy and benefit from the conference, the trade show, and spend time enjoying the culture, history and incredible natural beauty that Cape Town has to offer.

The conference theme, "Sustainable Aquaculture – New Frontiers for Economic Growth – Spotlight on Africa" highlights the potential of aquaculture production to support economic development and investment opportunities in Africa - the world's second fastest growing regional economy. We are pleased to present a five-day program entitled "Spotlight on Africa" that includes an opening ceremony plenary address by Guinean President Alpha Condé, Chairman of the African Union and African Union special ambassador for aquaculture. On the first full-day of the conference, two plenary addresses will be given: Dr. Rohanna Subasinghe, former chief of Aquaculture for FAO, will speak on "Feeding the Nine Billion: the Role of Aquaculture" followed by Dr. Sloans Chimatiro, Acting Country Director with WorldFish Zambia, speaking on "African Perspectives on Aquaculture". In recognition of the early developmental stage of African Aquaculture, special sessions on Developing African Aquaculture Value Chains, Financing African Aquaculture and African Aquaculture Policy will be organized by the African Union, NEPAD, World Bank and WorldFish. Our trade show will feature over 90 exhibitors and the WAS Scientific Program at the conference features 70 sessions that will be conducted over four days, covering a diverse array of aquaculture-related topics and speakers, as well as a dedicated poster session.

Representing the coming of age of African aquaculture and a significant milestone for the global aquaculture community, WAS will host a meeting to launch the formation of a WAS Africa Chapter on Tuesday afternoon following the Spotlight on Africa program. Be sure to join us for this important organizational to form the African Chapter of WAS.

For students, we will host a special tour of the DAFF Marine Research Aquarium, the Student Spotlight Presentations and awards, special seminars, and the student reception and a social event. Of course there will be many social events (Welcome reception, Student reception, President's reception, and Happy hours) that are important occasions to network with new and old friends from around the world. Be sure to participate in the Farm tours, which will highlight South Africa's Aquaculture Industry. On behalf of the World Aquaculture Society, we want to thank and recognize the Steering and Program Committee members for the many years of work that went into organizing this event. Best wishes for a productive and enjoyable conference.

Kevan L. Main, Roger Krohn & Siphokazi Ndudane – WA17 Steering Committee Co-Chairs
Maria Haws, Peter Britz & Michael Schwarz – WA17 Program Committee Co-Chairs

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ABSTRACTS

IMPACT OF IMPROVED SYSTEMS ON RICE AND COMMON CARP *Cyprinus carpio* MULTITROPHIC TROPICAL AQUACULTURE, ANTANANARIVO, MADAGASCAR

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Flooded rice fields are ecosystems favorable to the growth and production of many aquatic organisms. They can even play a major role in the feeding and nutrition of local communities, as a source of self-recruiting species or by supporting the production of farmed fish in association with rice. In Madagascar, integrated rice-fish aquaculture systems are a 150+ years-old tradition. The initial species was goldfish *Carassius auratus*, locally known as *Trondro gasy* (meaning, "the Malagasy fish") but now, the common carp (*Cyprinus carpio*) took over as the main produced species, sometimes in polyculture with tilapia. Although traditional, the technology has recently been improved by several organizations (FAO, APDRA) by building larger and higher side dykes and digging a canal in the middle of the field, which serves as a refuge area for fish when the field is drained. However, this also implies an approximate 10% loss of space for rice production, a basic food commodity for local populations, which is supposedly compensated by higher rice productivity in integrated system.

The first aim of this farm experiment was therefore to assess the productivity of these systems by characterizing the importance of the different trophic compartments in traditional (rice + self recruiting species) and integrated systems (rice+carps improved systems, Fig. 1). However, nutrient availability can be a limiting factor, as feed and fertilizers are expensive. Trophic deadlocks can then be suspected in iron-rich areas due to phosphorous chelation in sediments. As common carp is a detritivore/omnivore fast-growing species which trophic behavior (bioturbation) involves re-suspending sediments, it is expected that its introduction in inundated rice field will improve nutrient availability and increase rice and fish production. The second scientific question is then focused on determining the nutrient pathways and deadlocks, and how they impact the common carp, rice and fish production.

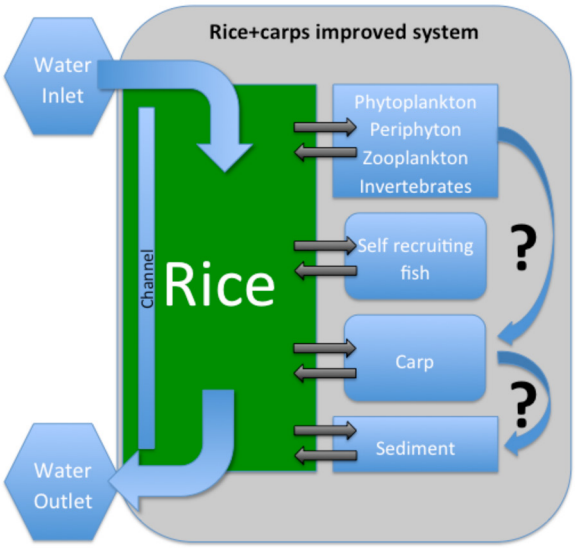

Fig 1: Experimental design of "rice+carps improved system"